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## “OCCUPATIONS” IN THE TWELFTH CENSUS

The volume devoted to occupations in the Twelfth Census constitutes a special report in which data regarding occupations are given in full detail. In conformity with the provision in the census law which required publication of the main reports before July 1, 1902, such of the occupation data as could be prepared before that date were included in the general report on population, already noticed in this *Journal*. Many of the data, however, could not be handled in the time allowed, and have necessarily been held over for this volume. Question might very well be raised as to the wisdom of putting a time limit upon the Census Bureau which has to be evaded, and which has resulted in the publication of preliminary reports constituting the regular census volumes, supplemented by special reports in which data are more completely tabulated. All the advantages of early publication are, it would seem, secured by the issuing of census bulletins in accordance with the practice of the bureau.

In the last three censuses occupation statistics relate to persons, ten years of age and over, “gainfully” employed or “occupied in gainful labor.” This last provision somewhat uncertainly restricts the scope of the inquiry, especially as regards the inclusion or exclusion in the returns of women and children not regularly working for hire, but who do nevertheless “appreciably assist in mechanical or agricultural industry”—in agricultural industry more especially. It might be inferred from this that the data in these censuses are strictly comparable; but this highly desirable quality of the data has been much impaired by the character of the instruction given out to enumerators, and by varying degrees of carelessness, inexperience, and misinterpretation on their part.

In the census of 1870 no age limit was specified, but the inquiry was not to be asked “in respect to infants or children too young to take any part in production.” This last injunction savors somewhat of the too obvious, but it is, nevertheless, not altogether clear why the census should have departed from the practice of 1870, and definitely excluded children under ten years of age. Justification seems to have been based upon the fact that comparatively few returns were made

for those under ten years, but if there are children at work under that age, the fact ought to appear in the census data. Even though the number be small, its increase or decrease from decade to decade might be significant of social conditions. There is, however, evidence in the census returns, and it is a fact of common observation, that a considerable number of children under ten years are "occupied," in the census sense of that term. The number of children ten to fifteen years of age, inclusive, returned as at work during the census year 1900 is 1,752,187, distributed by age as follows:

Age	Total	In Agriculture
10.....	142,281	121,429
11.....	158,860	131,812
12.....	221,524	171,653
13.....	268,627	179,412
14.....	326,191	213,736
15.....	553,704	243,209

The number returned for the age of ten years is sufficiently large to indicate considerable employment of children under that age. A further analysis of the total brings out the fact that most of these children in the lower age-groups are employed in agricultural pursuits. After the age of twelve the preponderance of those engaged in agriculture decreases rapidly. It is probably true, however, that there is some falsification of returns for other occupations where legislative prohibitions are enforced regarding employment of young children.

The inclusion or exclusion of children under ten years of age is, however, a matter of judgment. What is of far more importance than this is the character of the data which are in fact given, and it is exceedingly unfortunate that our census data dealing with occupations have perhaps been least satisfactory regarding exactly that group, composed of those aged ten to fifteen years, about which accurate information is most needed. It is estimated that something over half a million children in this group were omitted in the census of 1890, which were included in the censuses of 1880 and 1900. Moreover, the census of 1890 adopted an age-group ten to fourteen year, instead of continuing the age classification of 1880, ten to fifteen years. The last census has returned to the classification of 1880. This necessitates "correction," based upon estimates, of all data for 1890, where comparisons are to be made with the data of other censuses.

Aside from this unfortunate, and seemingly arbitrary, reclassification by age, which to a considerable extent invalidates comparison, a high degree of inaccuracy attaches to data for this group, which has pretty clearly resulted from blind and needlessly ambiguous instruction given out to the enumerators. In view of past experience, it seems inexplicable that the phrasing of instructions on this point should have remained practically unaltered for four censuses. Take, for example, the following paragraphs of instruction sent out to enumerators in 1900:

219. The doing of domestic errands or family chores out of school hours, where a child regularly attends school, is not an occupation. But if a boy or girl, above ten years of age, is earning money regularly by labor, contributing to the family support, or appreciably assisting in mechanical or agricultural industry, the kind of work performed should be stated.

Elsewhere, in paragraph 223, it is stated that a return is required for each and every person ten years of age and over who was engaged in gainful labor during any part of the census year (June 1, 1899, to May 31, 1900, inclusive), or who is ordinarily occupied in remunerative work, but during the census year was unable to secure work of any kind.

It is safe to say that no two men of average intelligence—in fact, no two trained statistical experts, certainly no two of the 53,000 odd enumerators, green in the field—would put exactly the same interpretation upon this instruction, which is, to say the least of it, reprehensibly ambiguous and confusing. Possible interpretations, without assuming any undue perverseness of ignorance or stupidity on the part of enumerators, regarding children ten years of age are:

a) All such attending school, during any portion of the census year, should be omitted, whether or not employed during some portion of the year in “gainful” pursuits—the word “gainful” being somewhat ambiguous in itself.

b) That all such, attending school, but employed during some portion of the year, should be returned.

c) That only those “earning money” during some portion of the year be so returned, whether attending school or not.

d) That only those earning money regularly throughout the year be returned.

e) That those regularly employed be returned, whether earning money or not, as for example, children at home helping in farm work.

f) That those “contributing to the family support” (whatever that may mean) be returned, if not in school.

g) That they be returned whether in school or not.

h) That whether they be returned or not depends upon regularity of employment alone.

i) That it depends upon gainfulness alone.

j) That it depends upon attendance or nonattendance at school, alone.

All this without taking into account the shades of ambiguity attaching to the final phrase "appreciably assisting in mechanical or agricultural industry," which are altogether too manifold for analysis. This phrase, indeed, leaves the enumerator absolutely free and uninstructed upon a vital point. In view of the general injunction to make returns for those only who are employed in gainful labor, the specific instruction to include children who "contribute to family support" or "appreciably assist" in farm labor is confusing, and has resulted in the inclusion or exclusion of children capriciously—the omissions amounting, it is estimated, in 1890 to over half a million, although it is difficult to believe that any very accurate estimate can be made regarding the action of enumerators under this instruction at the several censuses.

In general it may be said that the instructions sent out to enumerators are susceptible of considerable improvement in respect to clearness. They have been in the past confusing, and not always free from ambiguity, and have relegated to the enumerator the task of making distinctions and of defining terms—which task the Census Bureau ought jealously to have reserved to itself. The enumerator is told what not to do, and is instructed to make distinctions, but is not sufficiently aided to make them. It is, of course, possible for an enumerator to distinguish one occupation from another, so far as his own field of work is concerned, but the important thing is not that his distinctions should be made, or that they should be well and wisely made, but rather that the principle followed by him in making them should be that followed by his 53,000 odd fellow-enumerators. Uniformity of classification can be secured only by great conciseness and completeness of instructions, and these qualities are somewhat lacking in the instructions sent out regarding occupations in the Twelfth Census, as they have been in previous censuses. Witness, for example, the following selected paragraphs, which are typical of the whole body of instructions:

168. Distinguish between a *wood-chopper* at work regularly in the woods or forests and an ordinary laborer who takes a job occasionally at chopping wood.

182. Distinguish a *journalist*, *editor*, or *reporter*, from an *author* or other literary person who does not follow journalism as a distinct profession.

183. Return a *chemist, assayer, metallurgist*, or other scientific person by his distinctive title.

189. Distinguish carefully between a *real-estate agent, insurance agent, claim agent*, or *commission agent*, etc.

191. Return an *accountant, bookkeeper, clerk, cashier*, etc., according to his distinctive occupation, and state the kind of service rendered.

194. Distinguish carefully between a *bank clerk, cashier in bank*, or *bank official*, describing the exact position filled in each case.

195. Distinguish between *foreman* and *overseer*, a *packer* and *shipper*, a *porter* and *helper*, and an *errand, office*, and *messenger boy* in a store, etc., and state in each case the character of the duties performed by him.

In the above instances the enumerator is instructed to do that which the Census Bureau itself has not done, namely, distinguish the occupations mentioned, and give to each a clear definition. Obviously, however excellent the definition which the enumerator gives, it will not conform to that given by his fellow-enumerators. In fact, however, the average enumerator cannot be expected to know how to make many of these distinctions. Popular usage is in many cases entirely misleading, as, for example, in the case of the word "clerk," popularly used to indicate a salesman in a store. Against this and many other popular misusages the enumerator is warned, but he is not sufficiently aided in constructive classification. Such terms as "journalist," "editor," and "reporter;" "accountant," "book-keeper," "clerk," and "cashier;" "foreman" and "overseer;" "packer" and "shipper;" etc., should be carefully defined *for*, not *by*, the enumerator.

In the case of the wood-chopper above mentioned, the enumerator is virtually instructed not to be confused. The problem is the "ordinary laborer who takes a job occasionally at chopping wood," and the enumerator should be definitely instructed what disposition to make of him — namely, to return him as a *day laborer* — if that is, indeed, the intention of the Census Office.

It is needless to point out that such terms as "other scientific persons," who are to be returned by their "distinctive titles," have no statistical annotation or value whatever, and, as might have been anticipated, reference to detailed tables reveals the fact that this group is most marvelously composed, as follows:

"Authors and scientists".....	5,836
"Librarians and assistants".....	4,184
"Chemists, assayers, and metallurgists".....	8,887

Total "literary and scientific persons" in the United States. 18,907

Other instances might be cited of indefiniteness and ambiguity in detailing the general instruction to return, for all persons ten years of age and over, "that profession, trade, or branch of work upon which each person depends chiefly for support, or in which he is engaged ordinarily during the larger part of the time."

It may be regarded as being unduly critical to object to the English of the instructions, which is nevertheless unexceptionally bad. There is something painfully excruciating in such simple sentences, for example, as this: "Return a veterinary surgeon separately from another surgeon." Why not instruct the enumerator in homely English to "return veterinary surgeons as such; other surgeons, as surgeons simply"? There is a wearying repetition of the injunction to distinguish carefully between this *or* that.

To one unfamiliar with the practical difficulties of getting accurate returns for the census, it will seem that undue importance is here attached to minor details, but it should be borne in mind that the accuracy and significance of the census data depend absolutely upon the primary instructions sent out to enumerators. Ambiguity or lack of definiteness here means a vitiation of the census returns, which cannot be corrected by any subsequent refinements of tabulation in the Census Office. It is not at all sufficient that the instructions be susceptible of correct interpretation: they must be so absolutely simple, plain, and concrete as to make any misinterpretation of them a criminal offense. The character of the census data is absolutely determined in advance by the character of the instructions sent out to enumerators. Care at this point is all the more essential because no amount of investigation later on can determine the margin of error in the returns due to misinterpretation of instructions. It should be taken for granted that the enumerator will misinterpret wherever misinterpretation is possible, and that he will be confused by the least suggestion of ambiguity, which may completely vitiate the returns secured by the expenditure of millions of dollars.

In judging of the accuracy of the census returns regarding occupations the conditions of enumeration have to be borne in mind, namely, that the census enumerators, acting under their printed instructions above discussed, were securing information in answer to twenty-seven different inquiries, of which that referring to occupations was one. The very complexity of their task must have increased considerably liability to error, and have made it exceedingly difficult for the enumerators to follow even the plainest and simplest of

instructions. It is frankly stated in the general introductory account of the work that the time allowed for preparation "was so limited that not much effort, beyond the printed instructions to enumerators, could be made to secure exact returns," and that there was little opportunity for personal instruction of enumerators by the supervisors previous to enumeration, or for "close supervision of their work during its continuance," or for correction of the completed schedules before sending them on to Washington.

Bearing these facts in mind, we may pass on to a brief review of the data presented, with the object of determining, so far as possible, what the Twelfth Census has added to our knowledge of the population of the United States, as a working force, and what economic tendencies are in evidence.

In one respect the policy of the Census Bureau is deserving of the highest commendation. It has taken great pains to secure a specific statement in each case of the kind of work done, independently of the object made, and, using this as a basis, has reserved to itself the task of classification. The whole concern of the enumerator has, therefore, been to state specifically, in his own words, the kind of work done, and he has been especially warned against the use of general terms. The classification of occupations in the several censuses which have undertaken to secure data under that head may be briefly indicated as follows: The census of 1820 returned the number of persons engaged in agriculture, commerce, and manufactures respectively. No return of occupations was made in the census of 1830. In the schedule of 1840 four new occupation-groups are added to the three of 1820, providing for those engaged in mining, in navigation of the ocean, in navigation of canals, lakes, and rivers, and in learned professions and engineering. In 1850 the first detailed returns were made of occupations, which were classified under 323 designations "for free males over fifteen years of age." In 1860, 584 designations were used in classification, returns being secured "for free persons (without distinction of sex) over fifteen years of age." In 1870 there were 338 designations, "for all persons (by sex) ten years of age and over;" in 1880, 265 such groups; in 1890, 218; and in 1900, 303, "reduced to 140 for certain purposes, for all persons (by sex) ten years of age and over." Perhaps the instability of the census scheme of classification during this period is only a fair reflection of the changes which have characterized the processes and organization of industries themselves. Whatever the cause, it makes extended comparisons of results difficult and unprofitable.



The general facts regarding occupations at the taking of the last census are already well known, and need not be dwelt upon. The number of persons returned as engaged in gainful occupations is 29,287,070, which constituted 38.3 per cent. of the total population and almost exactly one-half, 50.3 per cent., of the total population ten years of age and over. There has been a considerable increase in these percentages over those of 1880 and 1890, which were respectively 34.7 and 37.2 of the total population, and 47.3 and 49.2 of the total population ten years of age and over. For each sex the percentage occupied of those ten years of age and over is given in the following table, for each of the three censuses:

	Males	Females
1880.....	78.7	14.7
1890.....	79.3	17.4
1900.....	80.0	18.8

Approximately four-fifths of the adult male population ten years of age and over is returned as occupied, and one-fifth of the adult female population. For the adult male population the percentage of employment is fairly constant from state to state, and from period to period. The percentage of employment for women shows a greater variation. It may be noted that the employments of women are less well defined than those of men, and that the returns for women are probably less accurate. It was the intention of the office to make no return of an occupation for women engaged in housework in their own home. This, of course, accounts for the low percentage of occupations for women. The increase of this percentage indicates the entrance of women into "gainful pursuits" as wage-earners, and the percentages of employment are high in the manufacturing sections of the country—as, for example, in certain of the New England states, such as Massachusetts and Rhode Island, where it rises to 28.1 and 29.6 respectively; and generally speaking throughout the South, wherever the negro race is predominant, as in South Carolina (38.0), Mississippi (32.7), and Alabama (30.6). The fluctuation in these rates is reflected in the average percentages for the five geographical divisions of the country, at the several censuses:

	1880	1890	1900
North Atlantic.....	17.0	20.5	22.1
South Atlantic.....	20.7	22.3	23.8
North Central.....	8.8	12.6	14.3
South Central.....	17.6	18.8	19.6
Western .....	9.0	13.3	14.5
The United States .....	14.7	17.4	18.8

The entrance of women as wage-earners, more generally into industrial pursuits, is therefore a fact of common observation, fairly well borne out by the census data.

The general age and sex distribution of those gainfully employed is indicated below at the censuses of 1890 and 1900:

	1890	1900
Men .....	77.3	80.0
Women .....	16.6	13.5
Children .....	6.1	6.5
Boys.....	4.4	4.8
Girls.....	1.7	1.7

As regards employment of children, the census data give considerable evidence that throughout considerable sections of the country, more especially in the South, but in several northern states as well, children are not sufficiently protected by law. Employment of children takes place primarily, however, in agricultural pursuits, not in manufacturing industries, and to that extent is not easily subject to legal regulation.

In all but sixteen states the proportion of male children occupied had increased at the last census; and in all but fourteen states the percentage of female children employed had increased. The cumulative percentages employed of children under fifteen years of age is given below for each geographical division:

	MALES			FEMALES		
	Under 12	Under 14	Under 15	Under 12	Under 14	Under 15
North Atlantic.....	3.9	21.8	51.1	2.3	17.4	48.2
South Atlantic.....	22.9	56.3	77.0	22.4	56.0	76.7
North Central .....	11.1	34.2	59.8	4.9	21.5	50.3
South Central.....	25.2	58.7	78.5	25.0	59.3	79.1
Western .....	9.6	31.3	56.4	8.1	26.4	50.9
United States.....	17.8	46.3	69.2	15.6	42.2	66.3

Massachusetts shows the lowest percentage of employment for children under twelve.

The detailed age distribution of the occupied population is a matter of considerable interest, as indicating the period of economic productivity. For each sex it is as follows:

Age	Male	Female
10-15.....	5.3	9.1
16-20.....	12.0	23.3
21-24.....	11.3	16.9
25-34.....	25.3	22.0
35-44.....	19.8	12.7
45-54.....	13.7	8.3
55-64.....	7.8	4.8
65 and over.....	4.5	2.6
Age unknown.....	0.3	0.3

It will be observed that very nearly one-half of the women employed, exactly 49.3 per cent., are under twenty-five years of age, while considerably less than one-third of the men, 28.6 per cent., are within that age-group. This age distribution indicates roughly the depletion of the ranks of women wage-earners during that period at which marriage commonly takes place. This depletion is, however, more clearly indicated in the following table, which gives for each age-group, by sex, the percentage employed:

Age	Males	Females
10-15.....	26.1	10.2
16-20.....	76.8	32.3
21-24.....	93.1	30.8
25-34.....	96.3	19.9
35-44.....	96.6	15.6
45-54.....	95.5	14.7
55-64.....	90.0	13.2
65 and over.....	68.4	9.1
Age unknown.....	59.6	24.2

For men the rate is unaffected by conjugal condition. The age-group showing the highest percentage of employment is thirty-five to forty-four years inclusive; for women, sixteen to twenty years, falling off sharply in the next age-group. For men no marked decline occurs until after the age of sixty-five. These figures must not be understood as having any bearing whatever upon amount of unemployment during the census year. Some attempt has been made, however, to present data upon this matter. The above table

states for each sex- and age-group the percentage returned as having some regular "gainful" occupation, and includes those temporarily unemployed; in the table following some attempt is made to show for each sex, the amount of unemployment during the census year:

Period of Unemployment	Males	Females
1-3 months.....	49.6	47.1
4-6 months.....	39.6	39.1
7-12 months.....	10.8	13.8

Some further analysis of unemployment is made by occupation, but the data presented under this heading must be regarded as highly unsatisfactory. The collection of accurate data regarding unemployment is conditioned upon the permanent establishment of the Census Bureau, and more satisfactory results may be expected in the future.

In conclusion, one may perhaps raise a question as to the fundamental principle upon which classification of occupations is based in the census, namely "gainfulness." The adoption of this criterion has naturally resulted in the exclusion of returns regarding women whose chief occupation is housework. It would seem as though the nature of the work done might be accepted as the essential matter, irrespective of its "gainfulness," in order that returns for this considerable group of the population might be included. What one wants to know is the number engaged in farming, trading, railroading, mining, housework, or otherwise occupied. It is, of course, of great economic interest to know also what proportion of these are working for hire or profit, or "gain."

One further general criticism is perhaps warranted. Statistics naturally, perhaps necessarily, bulk large for small intrinsic value, but in the census volumes unnecessary repetition is not avoided. In text the content of tables is recited to no purpose, and tables are repeated almost *in toto*. In some instances it is true, the repetition serves to give emphasis or to state a new relation. In other cases no such end is subserved. The tedious reciting in text of the content of tables is confusing, and calculated to kill one's interest. Of critical comment, properly so regarded, there is a minimum amount. The summary and analysis of results are not as illuminating as they ought to be. If the data presented are not significant, the comment should be much briefer; if they are, that significance ought to appear more obviously in the summary and analysis.

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